

VI. ANALYSIS OF SPECIFIC NETWORK ELEMENTS

The following sections analyze whether the Commission should order that particular elements be unbundled and provided at cost-based prices. The best place to look for evidence of the possibility that an efficient CLEC's meaningful opportunity to compete may have been impaired is the market. CLECs are competing successfully across the country without using incumbent LEC network elements. Much of the existing marketplace evidence is presented below.

A key common thread that emerges is that because the competitive situation for elements varies so enormously by geographic market, the Commission must examine specific markets (or groups of markets) in order to properly apply the necessary and impair standards. A single national treatment of transport or loops, for example, could never be justified under the Commission's well-established market definition precedents because the alternatives to network elements and the overall competitive situation in major urban areas differs so greatly from rural areas.

The elements analyzed below include all of the elements the Commission subjected to unbundling under its original analysis as well as "new" elements discussed in the *Second FNPRM*.²⁶ Operations support systems should be provided to support network elements that must be unbundled. Where an element is not subject to unbundling, unbundling of OSS for that element is not required by the section 251(d)(2).

Consistent with the approach outlined above, and the Commission's traditional approach to competitive analysis, each of the following sections defines a product and geographic market

²⁶ The Commission must approach each of these elements with a blank slate. *Iowa Utilities Board*, 119 S.Ct. 736-737.

(and, where appropriate, sets out the proper way to aggregate individual geographic markets across the country to make analysis both accurate and manageable). Each section then describes the current competitive facts. Next, the analysis compares facts to the Act's standards, and includes a specific discussion of the likely consumer effect of mandatory unbundling at cost-based prices. Finally, each section includes a conclusion as to whether a particular element can legally be unbundled.

A. Network Elements Used In The Provision Of Advanced Services

The *Second FNPRM* seeks comment on whether network elements used in the provision of advanced services should be unbundled. *Second FNPRM*, ¶ 35 (citing the *Advanced Services NPRM*). The Commission singles out the incumbent LEC digital subscriber line access multiplexer (DSLAM) and packet switch in particular for comment. *Id.* As described below, both these elements are used to provide advanced service over the networks of incumbent LECs. The Commission has previously defined advanced services by their speed, rather than their method of delivery -- transmission at speeds in excess of 200 kbps are, at least today, considered to be advanced services whether delivered over cable, wireless, satellite or traditional wireline telephony facilities.²⁷

It would be extraordinary for the Commission to order unbundling in the advanced services arena. This is a market that is just being created. An unbundling requirement here would apply essentially to investment dollars, not existing networks or equipment. BellSouth has deployed fewer than 150 DSLAMs. For perspective, BellSouth has about 1,600 central

²⁷ *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, CC Dkt. No. 98-146, Report FCC 99-5, released February 2, 1999, ¶ 20 (*Advanced Services Report*).

offices. CLECs have installed more DSLAMs than "incumbents," and there is no shortage of capital that would stop them from continuing to do so. The Commission should be encouraging investment by all parties in this market. Unbundling incumbent LEC investment dollars does not do this, as AT&T has so vigorously, and successfully argued concerning the directly analogous investment it is making in upgrading its cable networks. C. Michael Armstrong, *Telecom and Cable TV: Shared Prospects for the Communications Future*, delivered to the Washington Metropolitan Cable Club (Nov. 2, 1998) available at <<www.att.com/speeches/98/981102.maa.html.

Unbundling is doubly unnecessary because the market facts demonstrate competitive advanced services may be provided equally well, or better, over other networks. In fact, both cable and wireless providers are ahead of incumbent LECs in rolling out advanced services.²⁸ As discussed more fully below, competition from alternative networks "opens the possibility of intermodal competition, like that between trucks, trains, and planes in transportation." *Advanced Services Report*, ¶ 48 (footnotes omitted). Competition between networks promises a "competitive 'broadband market.'" *Id.* ¶ 48 n. 46.

Unbundling the wireline network while leaving directly competing networks free of unbundling obligations would be a short-sighted, fundamentally anti-consumer and anti-Congress act because it would substitute regulation for competition instead of the reverse. Ignoring "intermodal" competition is exactly the shortsighted regulatory mistake that led to the deterioration of the nation's railroads, which labored under regulatory burdens not imposed on competitive forms of transportation. The Commission's analysis of unbundling in the advanced

²⁸ *Advanced Services Report*, ¶¶ 53-58.

services area must specifically account for the competitive discipline imposed by competing methods of delivering advanced services.

1. DSLAMs and Packet Switches in the Wireline Network

As detailed in the *UNE Fact Report: Advanced Services*,²⁹ high-speed services can be delivered over traditional wireline networks. Doing so requires a digital modem at the subscriber's premises and a DSLAM at the end of the subscriber's copper loop, generally the nearest central office. The DSLAM separates the xDSL subscriber's voice and data traffic.³⁰ Voice traffic is routed to a traditional circuit switch while data traffic is routed to its destination through a packet switch.³¹ The transport media used between the subscriber and the central office is the same twisted pair loop as that used for today's purely voice service.

To offer xDSL service to a particular subscriber, an incumbent LEC and a CLEC must go through exactly the same steps. First, a DSLAM must be purchased and located in the particular central office at which the subscriber's copper loop terminates. Because xDSL is a copper loop technology, the DSLAM cannot be located beyond the central office. Traffic beyond the central office is generally digitized and transported on fiber facilities. xDSL technology will not function in those circumstances. This technological fact means that enhanced extended links, for

²⁹ P. Huber and E. Leo *UNE Fact Report*, Prepared for Ameritech, Bell Atlantic, BellSouth, GTE, SBC, and US West, attached to the comments of the United States Telephone Association, filed in this proceeding (May 26, 1999).

³⁰ *In the Matter of Deployment of Wireline Services offering Advanced Telecommunications Capability*, CC Docket No. 98-147, *First Report and Order and Further Notice of Proposed Rulemaking*, FCC 99-48, released March 31, 1999, ¶¶ 11-12 (*Advanced Services Order*).

³¹ The packet switch can be a frame relay or ATM switch. Both provide the same basic functionality. The choice between them is driven by economics and quality of service needs. Both switches are also used for a broad array of other data services.

example, cannot be used by any carrier to provide xDSL service. All carriers, CLECs and incumbents alike, have to place DSLAMs at the end of the copper loop.³²

As far as purchasing, DSLAMs are available equally to incumbents and CLECs from several vendors. *UNE Fact Report: Advanced Services* at 24-26. There are no standards or manufacturer relationships that advantage Bell companies over CLECs. *Id.* To date, CLECs have purchased more DLSAMs than Bell companies, making CLECs the larger buyers. *Id.* CLEC relationships with well funded strategic partners, including the major IXC's, show that they are very unlikely to be at any disadvantage to incumbent LECs when it comes to purchasing DSLAMs.³³ *Id.*

DSLAMs are essentially modular. Once purchased, they can be installed in racks as demand warrants. Each central office DSLAM installed by BellSouth serve 576 lines. Remote terminal DSLAMs serve 192 lines. This allows both CLECs and incumbents to tailor deployment based on demand. Large start-up investments or traffic volumes are not necessary to cost-effectively deploy DSLAMs, and service can be efficiently added in relatively small increments. No CLEC has introduced evidence in any of the Commission's proceedings suggesting that they were at any disadvantage in purchasing DSLAMs.

Once purchased, by either a CLEC or an incumbent, a DSLAM must be installed. Installation of a CLEC DSLAM in an incumbent LEC's central office hardly impairs a CLEC's ability to offer services. There are about 1,000 CLEC collocation arrangements completed or

³² Current xDSL technology is designed to provide advanced service over copper facilities. In order to provide service to a particular subscriber, the DSLAM must connect directly to the copper loop serving the subscriber. Where a subscriber's copper loop is connected through digital loop carrier to fiber facilities before the central office, a DSLAM must be located in the field where the digital cross connect is made. A DSLAM must be located where subscriber copper facilities end. BellSouth provides CLECs the ability to locate DSLAMs in the field.

underway in BellSouth facilities. A cost analysis of CLEC collocation under the Commission's previous rules is attached. Attachment A. This analysis supports the market reality that collocation expenses are not impairing efficient CLECs' meaningful opportunities to compete.

The Commission's recent *Advanced Services Order* provides a broad new range of advantageous collocation opportunities for CLECs, further reducing their costs. The *Advanced Services Order* provides CLECs with, among many other things, claims to shared and cageless collocation in incumbent central offices, which provide opportunities to reduce collocations expenses.³⁴ BellSouth provides all these options. In addition, BellSouth provides CLECs and state commissions with detailed performance data on its provision of collocation. State commissions closely monitor BellSouth's provision of collocation.

Next, subscriber loops must be individually tested to determine if the loop can support advanced service. If the loop can support service, a modem must be available at the subscriber's premises.³⁵ In some cases, the local loop may need to be "conditioned" for service by removing equipment that would interfere with an xDSL signal.³⁶ BellSouth will condition loops for CLECs in a nondiscriminatory manner for a fee. In fact, under the Commission's rules, incumbents must "take affirmative steps to condition existing loop facilities to enable" CLEC provision of xDSL service. *Advanced Services Order*, ¶ 53. However, in some cases, the loop

³³ If any particular CLEC did not have sufficient purchase volumes to justify lower prices, it could pool its volume with other CLECs to get the lowest prices.

³⁴ A CLEC-to-CLEC market for shared collocation expense will quickly emerge if collocation does in fact represent a financial burden. If no market develops, that would suggest that CLECs with current collocation arrangements do not view the expense as substantial, otherwise they would seek to share the expense and the space.

³⁵ *Advanced Services Order* at ¶ 10.

³⁶ Standard equipment to provide voice service such as bridge taps and load coils may have to be removed to provide xDSL service.

simply cannot support the technology, and xDSL service cannot be provided by any carrier over the incumbent LEC network.³⁷

The next task is to connect the potential xDSL subscriber's loop to the DSLAM. This process is identical, whether the DSLAM is a CLEC's or an incumbent's. If voice service is being provided by the incumbent before xDSL service is initiated, the incumbent will disconnect the subscriber's loop from the MDF and provide a cross-connect to the DSLAM. The loop must then be connected to the DSLAM.

Transport facilities to the CLEC voice and packet switches are available from numerous CLECs in urban areas as set out in the Transport section below. BellSouth transport facilities will be available under 251(d)(2) where that standard is met, or under section 271 at market rates.

Finally, any CLEC offering xDSL service must be able to route data traffic to a packet switch to provide data service. Packet switches are available from several manufacturers. CLECs have deployed many packet switches. Because BellSouth cannot provide service across LATA boundaries, BellSouth must locate packet switches within each of its LATAs. CLECs are under no such obligation, and can locate switches to maximize network efficiency. Transport costs for data traffic are very low, and packet switches can effectively serve a very broad area. The provision of data services using packet switching is a new and rapidly growing market. *UNE Fact Report: Switching at 32-34.* Incumbent local providers trail the interexchange carriers by a very substantial margin in this market, in large part because this market demands national, not local, service. *See Frost & Sullivan, U.S. Markets for ATM, Frame Relay, SMDS and X.25 Public Data Services, at 1-5 (1998)* (AT&T, MCI and Sprint account for about 75% of

³⁷ For example, loops over 18,000 feet long generally cannot support xDSL technology. Of course, cable, wireless or satellite networks are not restrained by xDSL limitations, and can provide advanced service.

business data services and over 90% of more advanced ATM and frame relay services); *UNE Fact Report: Switching* at 32-34.

2. Competitive Provision of Advanced Service

As set out in Commission reports and orders and the *UNE Fact Report: Advanced Services*, advanced services are provided over competing cable, wireless, satellite and telephony networks.³⁸ The Commission has suggested that cable providers are farthest ahead in the race to provide advanced services, followed by wireless providers and CLECs. *Advanced Services Report*, ¶¶ 53, 57, 58. Incumbent LECs and satellite providers follow. *Id.* The Commission's conclusions were informed by market and technological facts. Incumbent LECs are not incumbents in the advanced services market. Inter-network competition in this market promises to be vigorous. "Numerous companies in virtually all segments of the communications industry are starting to deploy, or plan to deploy in the near future, broadband to the consumer market." *Advanced Services Report*, ¶ 12. These plans include enormous investment in facilities to provide service over the last mile to the home. *Id.*, ¶ 34.

a. Cable Providers

Cable providers are perceived to enjoy three key advantages over incumbent LECs in the advanced service race. These advantages may translate into permanent control of the advanced services market. As detailed in the *UNE Fact Report: Advanced Services*, advanced services are now available over cable networks to over 20 million homes, roughly 20 percent of the U.S. market. *UNE Fact Report: Advanced Services* at 7. Comparing the maps of cable and

³⁸ Advanced services are sometimes delivered over local elements like telephone or cable company wires to houses, and sometimes delivered over elements that can serve the entire nation, like satellites. Defining a geographic market for advanced services would be complex. Given the newness of the market and the fact that consumers are expected to face the same types

incumbent LEC advanced service deployment makes cable's present lead clear. *Id.* at 4, Maps 1 and 2. Cable providers add to this present advantage aggressive deployment plans. Cable advanced service will be available to over 30 million homes by the end of this year, while xDSL service is predicted to be available over no more than 1 million lines. *Id.* at 9.

Cable's broader rollout and other advantages has allowed it to develop a commanding lead. Industry observers predict that cable's "first mover" advantage is likely to translate into a commanding long-term position. *See, e.g.* Paul Kagan Associates, Inc., *Cable TV Technology, U.S. High-Speed Access Cable & ADSL Projection Model, 1997-2006* (Feb. 28, 1998) (predicting three quarters of U.S. households using advanced services will obtain service over cable networks); *UNE Fact Report: Advanced Services* at 11, n. 49 (collecting other citations).

Cable's perceived second advantage is the fact that its "broadband platform makes cable an optimal medium for transmitting large amounts of digital information - data, graphics, and video - at high speeds. *See*, B. Esbin, Office of Plans and Policy, FCC, *Internet Over Cable: Defining the Future in Terms of the Past* at 76, OPP Working Paper No. 30 (Aug. 1998); *see also* *UNE Fact Report: Advanced Services* at 11, n.49. That is, cable's last mile hybrid-coaxial cable infrastructure is generally perceived to be superior for advanced service to the twisted pair of the telephony network.³⁹

Cable's perceived third key advantage is its freedom from FCC imposed restrictions that hamper incumbent LEC investment in providing advanced services. Cable providers reject even the prospect of allowing competitors access to their network, through unbundling or otherwise.

of competitive choices in essentially every market, no particular geographic market is defined here.

³⁹ Of course, cable also has substantial advantages in constructing the long distance part of their networks because they are free of interLATA prohibitions.

“No company would invest billions of dollars ... if competitors which have not invested a penny of capital nor taken an ounce of risk can come along and get a free ride in the investments and risks of others.” C. Michael Armstrong, *Telecom and Cable TV: Shared Prospects for the Communications Future*, delivered to the Washington Metropolitan Cable Club (Nov. 2, 1998) available at <<www.att.com/speeches/98/981102.maa.html.

b. Wireless Providers

Advanced services are also being provided over wireless networks. *UNE Fact Report: Advanced Services* at 11-15. Providers are using a variety of spectrum allocations to provide service and have aggressive rollout plans. *Id.* Wireless spectrum serves as a complete substitute for incumbent LEC last mile facilities. In fact, the Commission has ranked wireless providers ahead of incumbent LECs in the deployment of broadband facilities that serve the last mile. *Advanced Services Report* at ¶¶ 53, 57, 58. MCI WorldCom and Sprint have been investing in wireless providers to provide advanced services. *UNE Fact Report: Advanced Services* at 13. Wireless providers have forged alliances with many major firms and have access to substantial capital to fund additional service rollouts. *Id.* at 13-14 and Table 4.

c. Satellite Providers

Satellite networks are already providing advanced services nationwide. *Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from Telecommunications, Inc. to AT&T Corp.*, Memorandum Opinion and Order, CS Dkt. No. 98-178, FCC 99-245, ¶ 74 (rel. Feb. 18, 1999)(Direct TV provides nationwide Internet access at speeds up to 400 kbps). Satellite service avoids the incumbent LEC network completely. Satellite providers are rapidly deploying and upgrading facilities. *UNE Fact Report: Advanced Services*

at 15-16. AOL has recently signed with Direct TV to offer satellite access to AOL's huge subscriber base.

d. CLECs

The market facts set out in the *UNE Report: Advanced Services* at pp. 18-24 show that the process for CLECs to deliver advanced services over incumbent networks is working. CLEC business plans predict that it will continue to work. CLECs have used incumbent loops and central office collocation to provide advanced service using their own DSLAMs and packet switches to such an extent that the Commission recently ranked CLECs ahead of "incumbents" in providing xDSL service.⁴⁰ *Advanced Services Report* ¶ 53, 56, 58. ALTS claims, on behalf of facilities-based CLECs, that CLECs using incumbent loops and collocation are leading incumbents in providing advanced services. *UNE Report: Advanced Services* at 20. In fact, these CLECs offered advanced services to over five million homes as of December, 1998, and expect that number to quadruple by the end of 1999. *Id.* A CLEC study claims that CLECs have also used the current process to outstrip incumbent deployment of DSLAMs to provide advanced services in rural areas. Economics and Technology, Inc., "*Building a Broadband America: The Competitive Keys To The Future Of The Internet*," at iv. Aggressive CLEC service rollout suggests that the process is working.⁴¹

⁴⁰ It is misleading to suggest that there are "incumbents" in the race to provide advanced services. Incumbent LECs do have local loop and central office assets that CLECs may not have. But these assets are available on a nondiscriminatory basis to CLECs as ordered by the Commission. Thus, no incumbency advantage remains, and, if any did, the Commission could remedy directly. In the other areas, there is no advantage. Incumbent LECs are not "incumbents" in the deployment of DSLAMs and packet switching. Instead, they are behind other providers of advanced services.

⁴¹ To the extent collocation or other issues are raised as handicapping CLEC rollout of xDSL service, the Commission should address the issues directly, consistent with the Act and Commission rules on such concerns, rather than bootstrap an unbundling requirement.

3. Will An Efficient CLEC's Meaningful Opportunity To Compete Be Impaired Without Access to Incumbent LEC DSLAMs and Packet Switches at Cost-Based Prices?

Efficient advanced services competitors have more than meaningful opportunities to compete in the provision of advanced services without the Commission creating investment disincentives for both CLECs and incumbents by mandating cost-based access to incumbent LEC DSLAMs and packet switches. The answer to the question of whether consumers are likely to benefit from forced unbundling of incumbent LEC advanced services network elements is hardly theoretical. To-date, there has been no requirement that incumbents unbundle DSLAMs or packet switches and “there are, or likely will soon be, a large number of actual participants and potential entrants in this market.” *Advanced Services Report*, ¶ 48 (footnotes omitted). As the Commission has noted, competition among cable, wireless, satellite and telephony networks mean that “the preconditions for monopoly appear absent in the ‘last mile’ of the advanced services market. . . . There is no indicat[ion] that the consumer market is inherently a natural monopoly.” *Id.* If the last mile for advanced services is not subject to monopoly, DSLAMs and packet switches readily available for purchase can hardly be an impediment to competition. Competition is serving consumers today without unbundling.

Advanced services competition comes from several sources. Cable networks appear to have the lead and are predicted to translate their earlier start, network topography into a long-term commanding lead in subscribers. The Commission has also ranked wireless providers ahead of incumbent LECs in deploying service. Today’s market leaders have no need for incumbent LEC elements to provide advanced services over their networks. The lack of availability of those elements has not impaired, and could not impair, their opportunity to compete.

The Supreme Court's requirement that the Commission look outside incumbent LEC networks when considering whether not making an element available would impair competition dictates that the Commission give great weight to this evidence of actual competition between networks. This competition guarantees consumer welfare. By rights, the Commission should go no further. Antitrust precedent would end the analysis once it became apparent that firms could successfully compete without the facility. Requiring access to a facility that is "essential" or important simply to benefit one set of competitors bound to a particular business plan will not create any consumer benefits when competition already exists. Unbundling in these circumstances will have only negative consequences -- reduced investment and administrative cost burdens.

Even should the Commission seek to turn the impair test into a test of whether a particular sort of competitive strategy should be favored over competition-- by substituting a test of whether a "CLEC using an incumbent LEC's loops has a meaningful opportunity to compete without the incumbents DSLAMs and packet switches" test, the evidence shows that such CLECs are competing successfully today, without unbundled DSLAMs and packet switching.

CLECs have been collocating their own DSLAMs and using their own packet switches to provide advanced services over incumbent local loops. CLECs have been so successful at doing this that the Commission has ranked them ahead of incumbents in deploying advanced services. *Advanced Services Report*, ¶¶ 53, 56, 58. CLECs themselves claim that they provide advanced services to over five million homes, that they lead the incumbents in providing advanced services, and that their services will continue to be rolled out on an aggressive schedule. *UNE Fact Report: Advanced Services* at 20 (collecting citations).

In effect, the Commission has conducted an experiment and the results are in. CLECs have very successfully competed using their own DSLAMs and packet switching. Announced CLEC plans for continued aggressive service roll out, in both urban and rural areas, show that lack of access to unbundled DSLAMs and packet switches is not impairing tomorrow's CLEC advanced service. Without competitive impairment, there is no justification for unbundling these elements.

4. What Effect On Investment In DSLAMs And Packet Switches Will An Unbundling Obligation Have?

Given advanced service competition from other networks and from CLECs using basic elements of incumbent networks, there is no competitive or consumer benefit to be entered on the positive side of the ledger from unbundling incumbent DSLAMs and packet switches. However, unbundling these particular elements would give rise to some especially substantial negatives. As set out in the *Jorde, Sidak and Teece Affidavit*, unbundling reduces investment. Given a no-risk no-cost option to use incumbent DSLAMs and packet switches at cost-based prices, CLECs will exercise that option and forego investing in their own equipment in at least some circumstances. This effect will be especially pronounced in areas where CLECs can avoid risky investments in new technology by relying on incumbent LEC investments.

In addition, as set out in the *Jorde, Sidak and Teece Affidavit*, incumbent LEC investment in advanced services technology will suffer from imposing obligations to share the technology at cost-based prices. This effect will be especially pronounced in this innovative, relatively risky technology.⁴² That the reduction in investment is likely to be major is supported not just by

⁴² This results from the relatively high risks of deploying facilities to offer untried advanced services. Consumers may not accept the technology or may select alternative network providers, so incumbent LEC investments may not prove profitable in the market. If the investments are successful, forced unbundling at cost-based prices limits the investor's returns to a

academic analysis. AT&T, which is engaged in similarly upgrading its cable networks warns that "no company will invest billions of dollars to become a facilities-based ... services provider if competitors who have not invested a penny of capital nor taken an ounce of risk can come along and get a free ride on the investments and risks of others." Remarks of C. Michael Armstrong, Chairman and CEO, AT&T, delivered to Washington Metropolitan Cable Club, Washington, D.C. (Nov. 2, 1998).

5. Loop Spectrum May Not Be Unbundled Under Section 251(d)(2)

The Commission has raised the prospect of requiring unbundling of spectrum on incumbent LEC loops in another proceeding.⁴³ *Second Advanced Services Order* at ¶ 99. The Commission appears to be interested in spectrum unbundling based on the interests of a particular subset of CLECs. These CLECs would prefer to pay for only a "part of the loop to deliver advanced services, rather than the entire loop, as incumbents and CLECs now do. Spectrum unbundling may not be ordered under section 251(d)(2).

The Commission has rejected similar proposals on their merits in the past because they were not in the interests of competition. In rejecting those proposals, the Commission concluded correctly that "[g]iving competing providers exclusive control over network facilities dedicated to particular end users provides such carriers the maximum flexibility to offer new services to such end users." *First Report and Order*, 11 FCC Rcd at 15,693 ¶ 385.

governmentally-set cost of capital. The investment examples presented in the *Jorde, Sidak and Teece Affidavit* demonstrate how incumbent LEC investment in new technology will be reduced.

⁴³ Initially, loop spectrum is not likely to qualify as a network element under the Act. And, providing access to unbundled spectrum is unlikely to prove technically feasible. The operational problems alone of managing different carriers using the same loop are likely to rise to the level of technical infeasibility. BellSouth will detail the technical and operational issues with spectrum unbundling in its comments in the Commission's advanced services docket.

Loop spectrum will not pass section 251(d)(2)'s impair test because there are alternative facilities to unbundled spectrum on the local loop that are being used to compete in the provision of advanced services. As set out above, these alternative facilities include cable loops, wireless and satellite access and the use of the incumbent's local loop. Cable and wireless providers, using their own facilities, lead incumbents in deploying advanced services. As described above, CLECs have been able to provide advanced services over incumbent loops to the extent that they can also claim to be ahead of incumbents in rolling out service. The availability of these alternative facilities precludes a finding that failure to unbundle spectrum could impair an efficient CLEC's meaningful opportunity to compete.

Unbundling incumbent loop spectrum can have no consumer benefits because the advanced services market is already competitive.⁴⁴ Even CLECs that wish to provide only advanced services over the telephone local loop have competitive options open to them -- they can ally with CLECs that offer voice services and offer voice and data separately or in a bundle over a loop. In this case, the loop would be taken in its entirety, then shared depending on the responsible CLEC's plans. Thus, CLECs have the same competitive options open to them as do the incumbent LECs. Forcing the incumbent to unbundle loop spectrum would create only a special advantage for particular CLECs.⁴⁵ Consumers benefit from rules that benefit competition not from rules that benefit only particular competitors.

Although there are no consumer benefits from spectrum unbundling, it would have substantial real costs. Unbundling under the Commission's TELRIC pricing scheme would

⁴⁴ Any benefit that could be advocated at this stage would be premature until after the industry and the Commission have gained experience with the Commission's recently changed collocation rules.

⁴⁵ Pricing unbundled spectrum under the Commission's TELRIC pricing scheme, given the cost allocation issues, is certain to create a fertile field for profitable arbitrage. The Commission should not mistake requests to create the potential for arbitrage based on regulated prices with competition.

create a significant disincentive to incumbent LEC and CLEC investment in advanced services. *Jorde, Sidak and Teece* at ¶ 57, 65 (calculating no net public benefits from spectrum unbundling). The operational and regulatory costs to administer a spectrum unbundling scheme would also be extremely high.

6. Conclusion

Failure to unbundle incumbent LEC DSLAMs and packet switches would not impair the opportunities for efficient competitors to compete in the provision of advanced services. Cable, wireless and satellite providers have rolled out service broadly and successfully without these elements. In fact, incumbent LEC DSLAMs and packet switches have no place in these alternative networks. CLECs have competed successfully to-date without unbundled DSLAMs and packet switches and continue to publicly announce their future success. Thus, the impairment standard is not satisfied. On the other hand, forced unbundling of those elements would reduce investment in the provision of advanced services by incumbents and CLECs alike.

Similarly, the unbundling of loop spectrum cannot be justified under section 251(d)(2).

B. Interoffice Transmission Facilities

The Commission's *First Report and Order* recognized that "there are alternative suppliers of interoffice facilities in a few areas." *First Report and Order* at 15718. Although there have been competing providers of local transport for years,⁴⁶ the Commission ordered that these incumbent facilities be unbundled and provided at cost-based prices throughout the entire United States because it felt that competitors would be better off with more rather than fewer options. *Id.* The closer attention to competitive alternatives required by the Court and the

⁴⁶ *UNE Fact Report: Interoffice Transport Section* at 1. In fact, both MCI and Sprint argued at divestiture that local transport was not part of the local monopoly and should be opened to competition. *Id.* at 2.

passage of three years during which CLECs have been installing fiber at a tremendous pace will reveal that competitive interoffice transport is readily available in many areas. At least in these areas, the failure to unbundle incumbent LEC interoffice transport facilities could not impair meaningful opportunities to compete.⁴⁷

1. The Market For Interoffice Transmission Facilities

Interoffice transmission facilities provide transmission paths among end offices, tandem switches and interexchange carrier Points of Presence (POP). *First Report and Order* at 15718. Of course, transport is also provided between end offices and CLEC premises. Transport facilities may be dedicated to the traffic of a particular carrier, or shared among a group. *Id.* Transport facilities are inherently local. They connect particular local points. Transport in one city cannot be substituted for transport in another city, thus the geographic market in which to assess transport competition and the availability of alternative facilities is local.

In similar circumstances (involving local service) the Commission has aggregated point-to-point markets based on the similarity of the competitive situation facing consumers. *See, e.g., Bell Atlantic/NYNEX Order* at 20016-7 (Commission found it appropriate to treat as a separate relevant geographic market “an area in which all customers in that area will likely face the same competitive alternatives for a product”); *LEC Regulatory Treatment Order* at 15794 (recognizing that interstate, long distance calling is a point-to-point geographic market that could properly be geographically aggregated into single national market because of “sufficiently similar

⁴⁷ The fact that section 271 requires Bell companies to provide unbundled transport to obtain long distance relief is hardly evidence that transport should be unbundled under section 251(d)(2)’s necessary and impair standard. Unlike section 251, section 271 does not mandate unbundling at cost-based prices. Congress clearly intended that an additional CLEC entitlement to cost-based prices could be created only after the separate section 251(d)(2) requirements were met. Also, since all section 251 UNEs must be unbundled under checklist item 2, checklist item 5 would be redundant if Congress had intended a particular outcome for transport under section 251(d)(2).

competitive characteristics” facing purchasers). In the *Bell Atlantic/NYNEX Order*, the Commission grouped local service customers into a LATA wide market and into a New York City MSA market. *Bell Atlantic/NYNEX Order* at 20017-9.

Under these well-established Commission precedents, geographic markets for point-to-point local transport can be aggregated based on the considerable similarity of competitive situations across defined geographic areas. Although MSAs, LATAs or other areas could be useful foundations for this grouping, BellSouth suggests that the most focused approach would be to adopt the three-zone approach the Commission established for special access and switched transport service pricing flexibility.⁴⁸

The Commission found that DS1 and DS3 special access services were subject to competition in 1992. *Special Access Order* at 7454-55, n. 412. The Commission also recognized that competitive pressure was growing rapidly. *Special Access Order* at ¶¶ 7451, 7452 (recognizing that in 1992 “competition is already developing relatively rapidly in the urban markets and will only accelerate with the implementation of expanded interconnection”); *Switched Transport Order* at 7423. This growing competition was occurring especially in urban areas where costs are lower and traffic density higher, making the economics of competitive transport particularly attractive. The Commission found that three geographic zones would properly reflect competition and the underlying competitive economics. *Special Access Order* at 7454-55, n. 413.

⁴⁸ See, *In the Matter of Expanded Interconnection with Local Telephone Company Facilities and Amendment of the Part 69 Allocation of General Support Facility Costs*, CC Docket Nos. 91-141 and 92-222, *Report and Order and Notice of Proposed Rulemaking*, 7 FCC Rcd 7369, 7451-55 (1992) (*Special Access Order*); *In the Matter of Expanded Interconnection with Local Telephone Company Facilities*, CC Docket No. 91-141 (*Transport Phase I*), *Second Report and Order and Third Notice of Proposed Rulemaking*, 8 FCC Rcd 7374, 7423-25 (1993) (*Switched Transport Order*).

The same economics drive the competitive provisioning of local transport, making these zones and the Commission's prior findings directly applicable to local transport.⁴⁹ The three zone approach results in narrowly tailored urban zones and larger geographic zones reflecting rural areas, as reflected on the maps of BellSouth's region attached as Attachment B. Because these zones have been drawn based on the economics of transport competition, they better reflect competitive realities than MSAs or similar areas.

As might be expected, the competitive choices available in different areas within these zones are also similar, making these zone groupings appropriate under the Commission's geographic market aggregation orders outlined above. For example, each of the sixteen Zone 1 areas in BellSouth's region has multiple CLEC fiber networks. The minimum number of separate alternative networks in Zone 1 areas ranges is three.⁵⁰ There are generally fewer in Zone 2 cities.⁵¹

2. Competitive Providers and Facilities

The number and variety of CLECs with transport facilities jumps out from even a quick glance at Appendixes A and B of the *UNE Fact Report: Interoffice Transport*, which lists CLEC fiber routes city-by-city. The carriers listed are large and small, old and new. They include IXC's, start-up CLECs and cable companies. There is enough CLEC fiber and wireless capacity

⁴⁹ The Commission noted that several IXCs "say that special access is identical to dedicated transport and directly related to common transport, and argue that consistent pricing guidelines should be applied to all the services." *Special Access Order* at 7450. The cost elements of special access described by the Commission match up with the cost elements of local transport. *Id.* at 7452.

⁵⁰ Given the difficulty in determining CLEC transport buildouts, and the pace with which new networks are being installed, these numbers are likely to understate CLEC facilities.

⁵¹ Similar results could be obtained starting with MSA or other geographic areas and then drawing reasonable distinctions based on the competitive choices available.

to lead some to conclude that there is a CLEC fiber capacity glut.⁵² The Commission has long recognized that transport was likely to become competitive quickly. *Special Access Order* at 7380, n.37. In 1997, the Commission found that “there are already a number of competitors offering [transport] services.” *Bell Atlantic/NYNEX*, 12 FCC Rcd at 20042.

Competitive transport facilities are generally fiber-based or provided over wireless links. Fiber facilities can carry very large amounts of traffic and that amount can be greatly increased by substituting more powerful electronics along the fiber path. At a bare minimum, CLECs account for “at least 11% of the total fiber optic system capacity potentially available to carry calls within *local* telecommunications markets.” *Local Competition Survey* at 8; *UNE Fact Report: Dark Fiber* at 28 (pointing out “vast understatement” in FCC estimates of CLEC fiber). CLEC fiber generally provides interoffice transport between incumbent LEC wire centers, CLEC offices, private switches and interexchange carrier POPs. *Local Competition Survey* at 6. CLEC fiber facilities can generally be extended economically to locations such as central offices or business customer locations. *Id.* at 14-15. Central offices in Zone 1 and Zone 2 areas are quite close together. CLECs have access to incumbent LEC poles, ducts and conduits to connect central offices to their fiber facilities.

CLECs are installing fiber at a rapid pace. “CLECs tripled fiber deployment from 0.4 million miles fiber miles at the end of 1994 to 1.3 million fiber miles ... at the end of 1996.” *AT&T/Teleport Order* at 15250-15251. More recent figures on CLEC fiber builds are provided in the *UNE Fact Report: Interoffice Transport* at 4-5.

⁵² Royce Holland, CEO of Allegiance Telecom, states “In Tier I markets today there is a tremendous glut of capacity.” W.T. Scott, et al, ING Baring Furman Selz LLC, Investext Rpt. No. 2787890, Telecommunications/Fiber vs. Fiberless (Sept. 30 1998).

The extent and breadth of competitive transport offerings is supported by the amount of collocation occurring in BellSouth's region. BellSouth presently has about 1,000 CLEC collocation arrangements in its central offices. Collocation is a good indicator of the presence of CLEC transport facilities. *Id.* at 7.

In addition, wireless spectrum can be, and is being, used to provide local transport alternatives. There are at least five firms with essentially nationwide wireless coverage in the 28 and 38 GHz range. *UNE Fact Report: Interoffice Transport* at 14 Table 3. These firms include AT&T, WinStar, Teligent and NextLink. These wireless services can provide large volumes of service on short notice. *Id.* at 13, n.35. The Commission has previously acknowledged that these wireless services are used to bypass incumbent LEC service.⁵³

Where CLECs have transport facilities a CLEC-to-CLEC market for transport services has arisen, as one would expect. For example, e.spire and Hyperion have contracted for capacity on each others' networks. Hyperion obtained capacity on e.spire networks in fourteen cities, including eight cities in BellSouth's region. "E.spire, Hyperion Agree on Fiber Swap", *Telecommunications Reports*, April 19, 1999 at 6. Dark fiber, which is carrier inventory that can be used to provide transport services, has become a commodity that is bought and sold by CLECs on an open market. *Advanced Services Report: Interoffice Transport* at 4-5. Wireless transport is also provided in a CLEC-to-CLEC market. *See, e.g., WinStar, Carrier Services* www.winstar.com/indexCarrServ.htm (WinStar's Wireless Fiber offers other carriers "a quick and cost-efficient solution for extending the reach of an existing fiber ring providing local

⁵³ *See, e.g., In the Matter of Expanded Interconnection with Local Telephone Company Facilities*, RM 7249, ENF-87-14, *Notice of Proposed Rulemaking and Notice of Inquiry*, 6 FCC Rcd 3259, n.3 (1991).

transport”). This wholesale market provides CLECs the ability to aggregate traffic volumes efficiently and to replicate incumbent LEC shared transport service.

3. Will An Efficient CLEC’s Meaningful Opportunity To Compete Be Impaired Without Access to Incumbent LEC Interoffice Transport at Cost-Based Prices

By using pre-existing access pricing zones, the Commission can answer the question of whether to unbundle incumbent LEC transport facilities in a way that meets the Act’s goals and the Court’s requirement that it consider the presence of alternative facilities. The Commission’s original approach made no attempt to delineate geographic markets or examine the competitive facts in those markets. *First Report and Order* at 15718-9. Given the competitive facts outlined above, where alternative facilities are present, CLECs cannot show that their opportunity to compete would be impaired without access to incumbent LEC facilities at cost-based prices.

In Zone 1 areas in BellSouth’s serving territory, there are at least three and often many more CLEC fiber networks in the ground now, with more planned. CLEC wireless networks are operating in many of these areas as well. The number of CLEC transport alternatives to incumbent facilities readily available in Zone 1 areas shows that CLECs can self-provide or obtain transport outside of incumbent networks in those areas.

In Zone 2 areas, there are generally fewer CLEC fiber alternatives. Wireless transport provides additional alternatives. *UNE Fact Report: Interoffice Alternatives* at 14, Table 3. Given these alternatives, and the ability of CLECs to enter and expand, the Commission should also find that incumbent Zone 2 transport facilities should not be unbundled.

Other market facts support these conclusion. A market for CLEC transport already exists. CLEC fiber and wireless networks have substantial capacity, perhaps excess capacity,

and that capacity can easily be expanded.⁵⁴ CLECs are also installing new fiber at a rapid rate. *Id.* at 2-5. Entry is relatively easy given the need only to connect points where substantial traffic is aggregated. Based on the presence of these alternatives and the relative ease of entry and expansion, the Commission must conclude that CLECs will be unimpaired without cost-based incumbent LEC transport facilities in these areas. The Commission should not include interoffice transport in Zone 1 or Zone 2 on its list of UNEs.⁵⁵

In Zone 3, the lack of competitive networks suggests that CLECs would have to use wireless facilities or self-provision fiber facilities. Whether the use of wireless facilities or self-provisioning would actually impair an efficient CLEC will require the Commission to collect factual information from CLECs supporting that conclusion.⁵⁶

4. What Effect Will Mandatory Unbundling at Cost-Based Prices Have on Investment in Interoffice Transport Facilities

As set out in the affidavits attached to USTA's Comments in this proceeding, , mandated unbundling at cost-based prices significantly reduces consumer welfare costs. Creating a CLEC entitlement to cost-based transport on incumbent LEC facilities will inevitably reduce CLEC investment in creating and maintaining competitive facilities. *Jorde, Sidak and Teece Affidavit*. This effect is likely to be particularly serious as it will also reduce CLEC demand for transport

⁵⁴ In determining that AT&T was no longer a "dominant" carrier in the interexchange market, the Commission placed heavy reliance on the effectiveness of competitive *capacity* as a restraint. *AT&T Reclassification Order* at 3303-3305.

⁵⁵ BellSouth would, of course, have to provide access to transport under section 271. However, that access would be at market prices rather than at section 252's cost-based prices.

⁵⁶ The Commission requested comments on unbundling dark fiber. *Second FNPRM* at ¶ 34. Even if "dark fiber" could be classified as a network element, despite the plain language of section 3(29) of the Communications Act, given the huge amounts of CLEC fiber currently deployed and planned, imposing any sort of blanket requirement that incumbent LEC dark fiber be unbundled could not comport with section 251(d)(2) and the Court's requirement that the Commission consider alternatives and self-provisioning. CLECs can self-provision fiber as

alternatives from other CLECs. This may affect the viability of existing CLEC networks and will discourage additional CLEC build outs. An unbundling requirement will also reduce incumbent incentives to invest in transport networks. *Id.* BellSouth, for one, makes substantial on-going investment in maintaining and upgrading its transport networks. The value of this investment will be reduced by a cost-based unbundling requirement.

5. Conclusion

Given the presence of substantial competitive alternatives in Zone 1 and Zone 2 (or urban areas generally, if the Commission prefers a different geographic measure), ease of entry and expansion and the presence of a CLEC-to-CLEC transport market, the Commission cannot find that an efficient CLEC's meaningful opportunity to compete could be impaired without access to incumbent transport at cost-based prices. Imposing an unbundling obligation would not benefit competition or consumer welfare, but would create an important disincentive to investment in facilities that would benefit consumers. In Zone 3, the Commission must balance the investment disincentives against any concrete evidence of impairment submitted by CLECs.

C. Switching

After very cursory analysis, the Commission found that incumbent switches should be unbundled and priced based at cost because there was no evidence that other elements of incumbent networks could substitute for the switching element. *First Report and Order* at 15710-11. The Commission must now assess the competitive availability of switching and

efficiently as incumbents and can, and are, buying dark fiber from one another. Thus, CLEC opportunities are not impaired.

weigh the costs and benefits of unbundling.⁵⁷ This section is limited to traditional voice, circuit switching. Packet switching is dealt with in the Advanced Services section above.

1. The Market for Switching

The local switching element includes line-side and trunk-side facilities and the features, functions and capabilities of switch. *First Report and Order* at 15706. Switching provides the functionality needed to connect lines and trunks. Determining the correct geographic market for switching is complex. The geographic market is a function of the reach of a switch. The reach of a switch is determined by its technical capabilities and the economics of transport. The *UNE Fact Report: Switching* makes a compelling case that given today's technology for extending the reach of switches, the breadth and depth of CLEC switch deployment, and the ease of entry and expansion, that the most accurate geographic market may be the entire United States. Based on the similarity of the competitive facilities choices available, the Commission could treat the geographic market for switching as a national one.

An alternative approach to defining the geographic market for switching is also explored here. This approach would tailor the geographic market by using the zones prescribed for special access and switched transport pricing flexibility. As discussed in detail in the Interoffice Transport section above, these zones reflect basic economics of providing telecommunications service. The zones reflect telecommunications costs and traffic densities that affect the economics of providing competitive transport. These same factors affect the economics of

⁵⁷ The fact that section 271 requires Bell companies to provide unbundled switching to obtain long distance relief is hardly evidence that switching should be unbundled under section 251(d)(2)'s necessary and impair standard. Unlike section 251, section 271 does not mandate unbundling at cost-based prices. Congress clearly intended that an additional CLEC entitlement to cost-based prices could be created only after the separate section 251(d)(2) requirements were met. Also, since all section 251 UNEs must be unbundled under checklist item 2, checklist item 5 would be redundant if Congress had intended a particular outcome for transport under section 251(d)(2).

deploying competitive switches. The pattern of CLEC switch deployment, which focuses on more urban areas demonstrates this. *UNE Fact Report: Switching*. These zones also reflect the availability of competitive transport options that allow CLECs to obtain transport from sources other than the incumbent.

2. Competitive Providers and Facilities

Switches are available from numerous manufacturers. *UNE Fact Report: Switching* at 27. Switch prices have been falling for years. On a per-line basis, prices have declined 60 percent from 1986 to 1996 and are projected to fall another 12 percent by 2000. *Id.* at 27. CLECs installing switches now benefit from much improved switch pricing and technology and the consequent cost advantage over older incumbent LEC switching.

Switch manufacturers are actively competing for business from CLECs of all sizes. The largest switch manufacturers specifically tailor switches for small CLECs, reducing their entry costs and promising quick paybacks. *Id.* at 27-28. New, smaller manufacturers are targeting the smaller CLEC market specifically. These manufacturers are providing CLECs access to new technology such as server-based switching solutions that further lowers costs and provides additional flexibility and efficiency. *Id.* at 28-29. CLECs can purchase switches for as little as \$100,000. *Id.* at 28.

In addition to installing new switches, CLECs can look to other sources of switching. Long distance and wireless switches can be upgraded to perform local switching functions and PBX systems can substitute for Centrex services. AT&T has been upgrading 4ESS switches to offer bundled local and long distance services in at least 45 states. *Id.* at 30. There are approximately 2,500 wireless switches owned by carriers *other* than the Bell companies and GTE. *Id.* at 31. These switches can substitute for wireline switches. *Id.* The Commission, state

commissions and industry analysts agree that PBX systems provide yet another competitive alternative to incumbent LEC switches. *Id.* at 33-34.

Manufacturers are also tailoring switches to allow CLECs to extend their geographic reach greatly. Remote switches extend the reach of host switches, and all their features, for distances of 500 to 600 miles. *Id.* at 22. By using simple digital loop carrier technology, the range of a single switch can be extended substantially. CLECs regularly serve customers at much greater distances using digital loop carrier than incumbents do under their current architecture. *Id.* at 21. AT&T claims that using digital loop carrier extends the range of a switch to a 125 mile radius around the switch. *See, Petition of AT&T Corp. to Deny Application, GTE Corp. Transferor, and Bell Atlantic Corp. Transferee, Application For Consent to Transfer of Control*, CC Dkt No. 98-184, filed Nov. 23, 1998.

The evidence is clear that today CLEC switches can be installed in weeks or months. Speed of installation is an area of competition among switch manufacturers, and as a result, installation times have been decreasing. Lucent can manufacture and install a prefab central office and deploy service in 40 days. E.spire states that its typical switch installation takes “[n]o longer than 28 weeks from” order to the time service is turned up. *Id.* at 29-30 (citing e.spire press release and information from other CLECs and manufacturers). Because they now have switches installed across BellSouth’s region, many CLECs can extend their switching capability by deploying remote switches, as described above. Remote switches can be put into operation even more quickly. *Id.* at 30.

CLECs have been aggressively deploying switches across the country and in BellSouth’s region. In August, 1996, when the *First Report and Order* was released, CLECs had fewer than 100 switches deployed nationwide. Today, there are nearly 100 CLEC switches in BellSouth's

region alone. By March, 1999, CLECs had added more than 600 new switches.⁵⁸ As of March of this year, CLECs had deployed over 700 switches. *Id.* at 17. CLECs continue to plan aggressively, deploying switches in BellSouth's region. *Id.* at 27, Table 3. Where CLECs have installed switches, a market for shared CLEC switching has developed. ICG, for one, markets a "virtual switch service" that "allows ICG's switch to act as your switch."

CLECs have deployed between 2 and 20 switches in Zone 1 areas in BellSouth's region. There are 20 operational CLEC switches in Atlanta, with 6 more planned. Miami has 13 CLEC switches now in operation, with 9 planned. There are seven operational switches in New Orleans, with 5 more planned. In Zone 2 installed CLEC switches range from 4 down to zero. CLECs have plans to install more switches in zone 2 cities. Current deployed and planned switches for Baton Rouge, for example, total 7. Zone 3 covers relatively large amounts or primarily rural territory. Nonetheless, CLECs have deployed switches in Zone 3 and are planning more. Although Zone 3 areas in some states have no deployed switches, Zone 3 areas in Mississippi have 3 currently deployed switches and 10 more planned. Louisiana Zone 3 areas will have a total of 8 switches based on current plans.

Of course, given the ability of CLECs to extend the range of their switches through digital loop carrier and remotes, the switches in each Zone could serve a much broader geographical area than the Zone they happen to be in. The *UNE Fact Report: Switching* provides the results of such an analysis.

3. Will An Efficient CLEC's Meaningful Opportunity To Compete Be Impaired Without Access to Incumbent LEC Switching at Cost-Based Prices

⁵⁸ CLECs of all sizes have deployed and plan to deploy switches. Even very small CLECs are able to effectively deploy switches. *UNE Fact Report: Switching* at 17-18.

Resolving the question of whether lack of access to unbundled incumbent LEC switching impairs an efficient CLEC's meaningful opportunity to compete requires the Commission to look at what CLECs have done in the switching arena. In order to provide local service, CLECs need some way to perform local switching. Do market facts show that CLECs' ability to compete rests on unbundled access to incumbent switches, or do the facts show otherwise?

The facts show that CLECs have chosen to install their own switches rather than rely on incumbent switching. Dozens of CLECs have installed nearly a hundred switches in BellSouth's region alone. Over 700 hundred switches have been installed across the United States. These switches can serve broad geographic areas using digital loop carrier or remote switching modules. CLECs are purchasing these switches at continually falling per-line costs, and they have substantially more flexibility in deploying them than incumbents do. The speed of CLEC entry into local switching, and the lack of barriers to expansion of installed switches and the installation of new ones shows that by self-provisioning, CLECs would not be impaired by lack of access to unbundled incumbent switching.

CLECs are not ordering switching from BellSouth, even though unbundled switching is available. This cements the conclusion that CLECs would not be impaired without unbundling. As of January, 1999, BellSouth supplied about 50,000 local loops to CLECs and about 90 switch ports. In Tennessee, for example, BellSouth supplies about 22,000 local loops and *no* switch ports. This shows that CLECs that have collocated in BellSouth central office have chosen to send their loop traffic to their own switches rather than BellSouth's. CLECs have demonstrated that they can exercise a meaningful opportunity to compete without using incumbent LEC unbundled switching.

4. What Affect Will Mandatory Unbundling at Cost-Based Prices Have on Investment in Switching

Unbundling incumbent switching would be expected to reduce both CLEC and incumbent LEC investment in switching. *Jorde, Sidak and Teece Affidavit*. Yet, CLECs have been investing aggressively in switching despite the availability of unbundled incumbent switching. This is happening for at least two reasons. One is that switching is a key source of competitive service advantage. The second is that falling switch costs and increasing flexibility in the geographic reach of switches has made the investment payoff attractive.

These facts and the CLEC investment they favor would be radically altered if the Commission should proceed to order unbundled switching under rules that would require the switch to be provided combined with a loop. This is the aim of an AT&T *Ex Parte* that argues that without unbundled access to incumbent switches CLECs would be impaired by having to engage in “hot cuts” of local loops to their switches. AT&T *Ex Parte*, Dkt No. 96-98 “Remand Proceeding on Rule 319” at 36-38.⁵⁹ By avoiding “hot cuts” when using incumbent switches, AT&T intends to leave incumbent local loops connected to incumbent switching. “Hot cuts” would still be required to connect incumbent loops to CLEC switches. This proposal would have the Commission raise a barrier to competitive switching. To the extent “hot cuts” are a problem today, as AT&T argues, they are a problem shared equally whether a competing provider selects a CLEC or an incumbent switch. AT&T would have the problem borne solely by CLECs that have invested in competitive switching facilities.

⁵⁹ AT&T also argues that collocation constitutes an impairment. Given the approximately 1,000 collocation arrangements in BellSouth’s region, it is difficult to view collocation as an impediment. To the extent it may be, the Commission has lowered the costs of collocation substantially, and could continue to take action to solve any legitimate collocation issues. *Advanced Services Order*.